

Community Air Monitoring Project - City of Suffolk
June 26 Stakeholders Meeting

Charles L. Turner
Director, Air Quality Monitoring
Department of Air Quality Monitoring



Legislative Mandate

That by July 1, 2013, the Department of Environmental Quality, in consultation with the Virginia Department of Agriculture and Consumer Services, shall conduct enhanced air monitoring at fumigation sites and make its findings available to the Department of Health. The Department of Health shall (i) assess air monitoring data; (ii) determine whether health concerns exist at fumigation sites; and (iii) make recommendations, if necessary, to the fumigation services industry through appropriate trade groups and the Department of Environmental Quality as to whether additional preventative measures are needed to protect public health.



Basis/Rationale for Study

The DEQ proposes to perform an air monitoring study in order to assess the degree and extent to which emissions of methyl bromide from fumigation operations in Suffolk, Virginia impact the local community

Locations Selected for this Testing



Aerial view of Western Fumigation

Aerial view of Royal Fumigation



Office of Air Quality Monitoring has done previous sampling at Royal and Western Fumigation Sites.

Royal Fumigation – 1/28/2010, 2/22/2010, 3/5/2010, 3/19/2010, 4/23/2010

Western Fumigation – 8/9/2010, 8/17/2010, 8/20/2010, 8/27/2010

Preliminary monitoring was inconclusive prompting DEQ to recognize a need for a more comprehensive study

- From the Grant Application



The proposed monitoring project will enable DEQ to determine the methyl bromide concentrations in heavily populated areas with a focus on potentially sensitive populations. In addition, the collected data will provide supporting observations to determine whether available models or other methods can be used to predict methyl bromide impacts.

DEQ will use the collected data to perform a risk assessment of methyl bromide for populated areas potentially impacted by the fumigation facilities

DEQ will provide the necessary information to the Virginia Department of Health (VDH) in order for them to produce an overall health effects report.



What is Methyl Bromide?

- Also known as Bromomethane
- Methyl bromide is a colorless gas at room temperature and a liquid below 38.5°F (3.6°C) or when compressed. It is usually shipped as a liquefied, compressed gas. It is odorless and nonirritating at low concentrations and has a musty or fruity odor at high concentrations (greater than 1,000 ppm). (ATSDR)
- **Inhalation** - Most exposures occur by inhalation and by absorption through the skin. **Odor is not an adequate indicator of the presence of pure methyl bromide and does not provide reliable warning of hazardous concentrations.** Because pure methyl bromide lacks adequate warning properties, significant exposure can occur before symptoms are evident. (ATSDR)

The Design of the Project

- Collect wind speed, wind direction, temperature and relative humidity prior to and during the project.
- Use an infrared camera to map the plume during the fumigation process.
- Use the results from the infrared camera evaluation to establish a network of canister samplers and portable monitors to locate the maximum concentration.
- Set up a temporary fixed station for the 24-hour sampler to collect information to illustrate how the concentrations change over time.
- Use monitored information to determine ambient concentrations and how the concentrations change with time and distance.
- This information will be used by DEQ to estimate annual methyl bromide exposure for each community and to perform a risk assessment.
- The collected information will also be used by VDH to develop the health affects report.

Note about Infrared Camera Results

<http://www.flir.com/thermography/americas/users/view/?id=49562>

What products and reports will come from this study

→ Initial Data Report

This is a highly data intensive report that evaluates the validity of the results of the testing.

→ DEQ Risk Assessment Report

This report is where DEQ takes the data results from the testing and translates the concentrations in the air into actual risk numbers

→ Health Assessment

VDH will be discussing this portion of the report.



Technology that will be used

- Volatile Organic Compound Canister Samplers
- Photo-ionization Detectors
- Passive Canister Samplers
- Automated Gas Chromatography





Volatile Organic Compound Canister Samplers



Passive Canister Sampler



Approximate Timeline for the Study

- Background Sampling begun July 31, 2012
- Initial IR Camera Scoping done July 31, 2012
- PID Network Configured and Tested August 16th
- Sampling/Analytical Results August 16th – November 26

The major uncontrollable unknown is the actual production Schedules of the 2 facilities involved in the study!!!